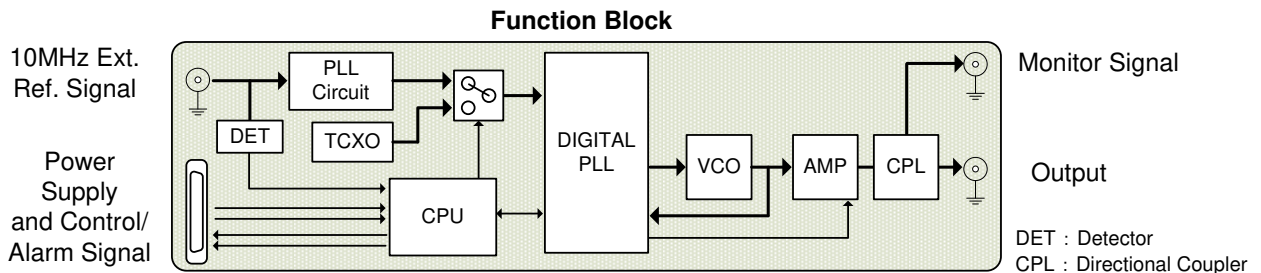


### Features

- \* Best Suited for Local Oscillator of Microwave Equipment with Low Phase Noise and Low Spurious Emission
- \* Programmable Channel Selection by Rotary Switch or Serial Control Signal
- \* Built-in PLL Circuit for Synchronizing to External Reference Signal (TCXO is Active in Case of No External Reference Signal.)



RoHS Compliant  
Directive 2011/65/EU



### Specifications

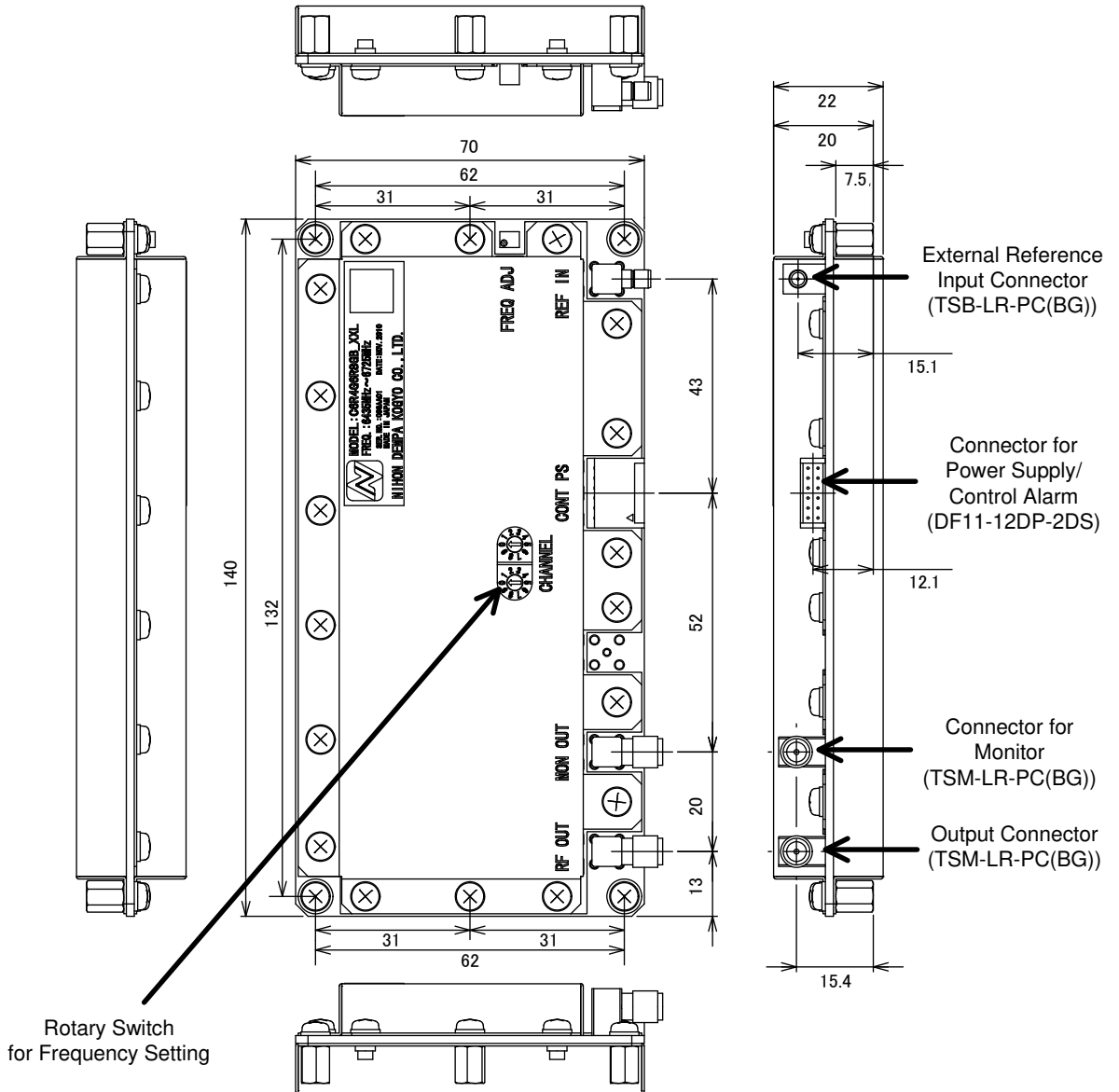
<b>Frequency Range:</b>	<b>6570.50MHz to 6589.75MHz</b>
<b>Frequency Resolution:</b>	<b>125kHz</b>
<b>Frequency Setting:</b>	<b>Rotary Switch or Serial Control Signal</b>
<b>Frequency Stability:</b>	<b>Depends on External Reference Signal Within +/- 5ppm / 10 years (Internal TCXO Stability) ※1</b>
<b>External Reference Frequency Range:</b>	<b>10MHz +/- 100Hz</b>
<b>External Reference Signal Level:</b>	<b>0dBm -10dB / +3dB</b>
<b>Phase Noise:</b>	<b>&lt; -47dBc (Integrated 1kHz to 2MHz)</b>
<b>Output Level:</b>	<b>+11dBm +/- 2dB</b>
<b>Monitor Output Level:</b>	<b>-9dBm +/- 2dB</b>
<b>Lock-up Time:</b>	<b>&lt; 500m sec ※2</b>
<b>Spurious (Harmonics):</b>	<b>&lt; -50dBc</b>
<b>Spurious (Non-harmonics):</b>	<b>&lt; -75dBc ※3 &lt; -65dBc ※4</b>
<b>Interface:</b>	<b>Output: SMA-F Connector Monitor Signal Output: SMA-F Connector External Reference Input: SMB-R Connector Power Suppl./Control Alarm Connector: DF11-12DP-2DS (manufactured by Hirose Electric Co.,LTd.)</b>
<b>Power Supply Voltage:</b>	<b>Vcc = DC+10V +/- 0.5V (Current Consumption &lt; 0.6A)</b>
<b>Operating Temperature:</b>	<b>0°C to +55°C</b>
<b>Dimensions:</b>	<b>Length(140mm) x Width(70mm) x Height(22mm)</b>

- ※1 Aging Stability (Temp. Stability from 25°C is less than +/-1 ppm )
- ※2 Frequency Setting by Serial Control
- ※3 In the frequency range +/-125kHz to +/-10MHz from output frequency
- ※4 In the frequency range 10MHz to 18GHz (excluded within +/- 10MHz from output frequency)

- Specifications described in this brochure are subject to change without notice for improvement.
- The above specifications are standard for this NDK product. Custom-made specifications such as frequency and other specifications are also available.

## Dimensions

Unit : mm  
Tolerance : +/- 0.4 mm

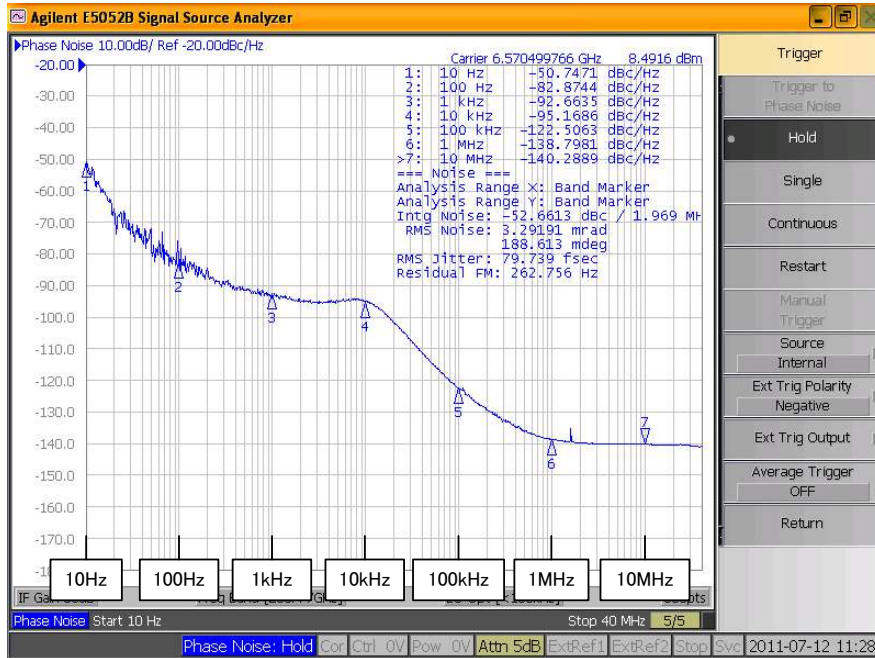


### Pin Assignment (DF11-12DP-2DS)

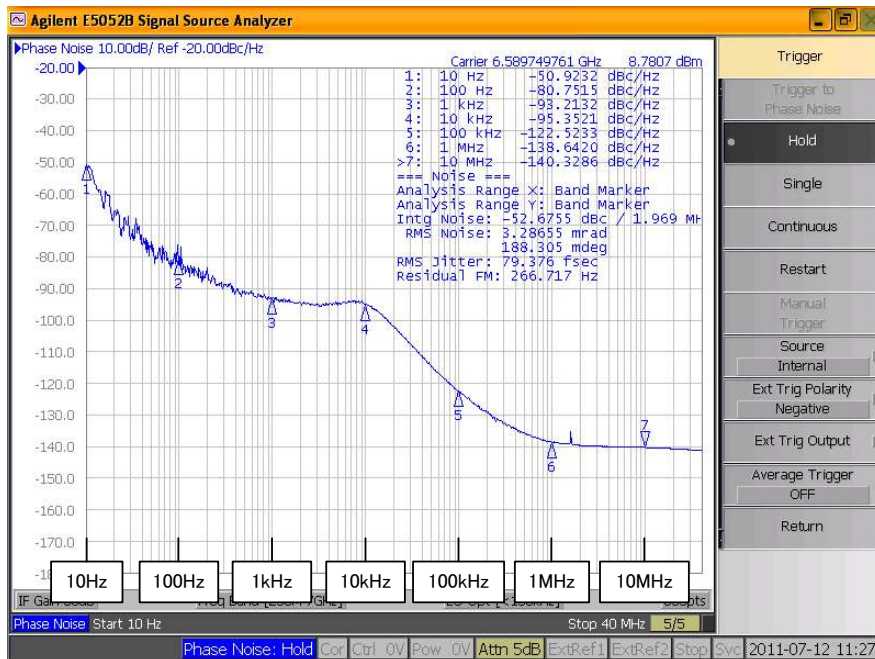
#1	GND		#7	TX	Output
#2	NC		#8	PLL Lock Detection	Output
#3	GND		#9	GND	
#4	Ext. Ref. Signal Detection	Output	#10	RX	Input
#5	NC		#11	Power Supply DC+10V	Input
#6	NC		#12	GND	

Remarks) Don't connect to NC pin.

### Phase Noise ( $T=+25^{\circ}\text{C}$ )

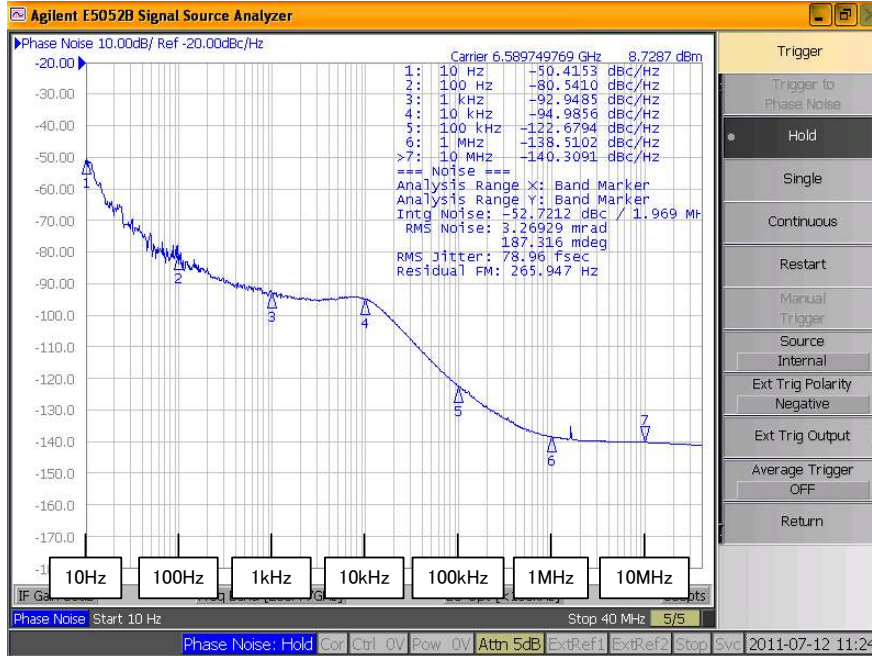


Output Frequency: 6570.50MHz



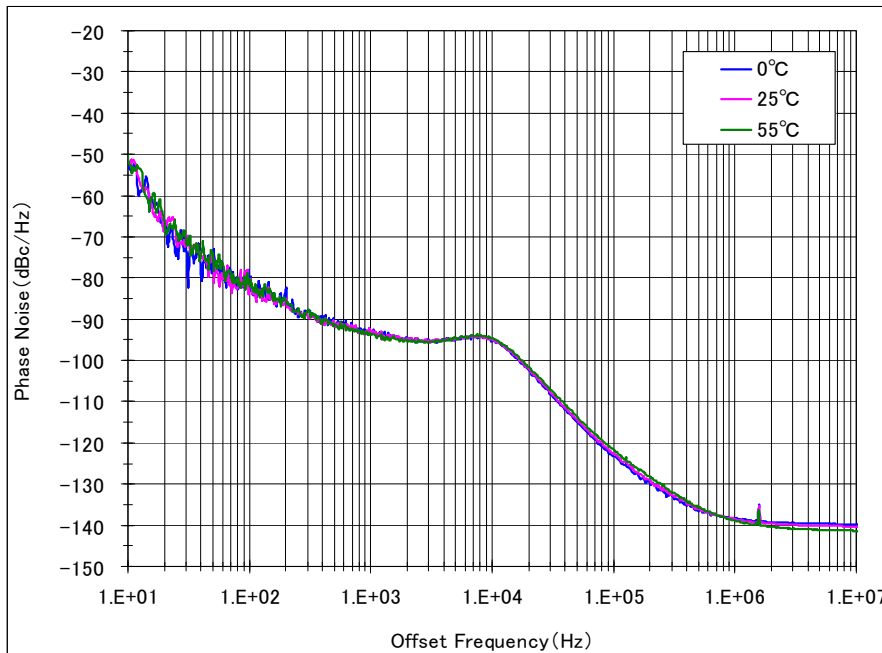
Output Frequency : 6580.125MHz

**Phase Noise (T=+25°C)**



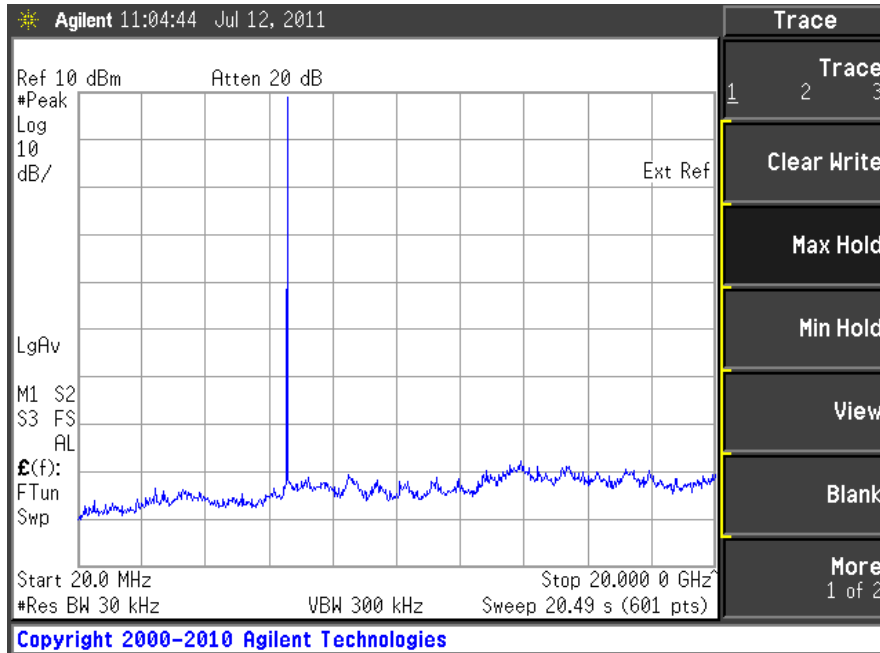
**Output Frequency : 6589.750MHz**

**Phase Noise**

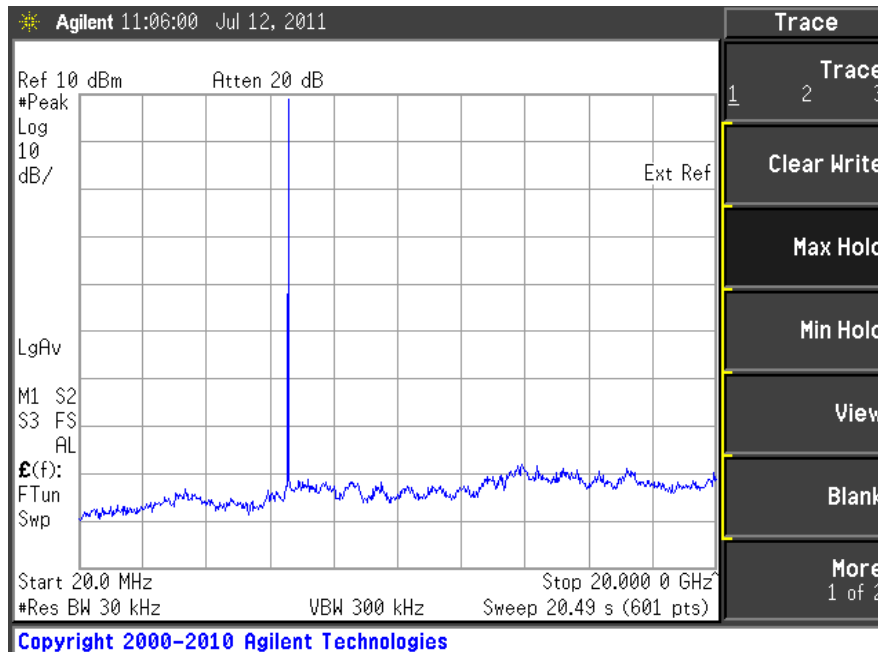


**Output Frequency : 6589.750MHz**

**Spurious (T=+25°C)**

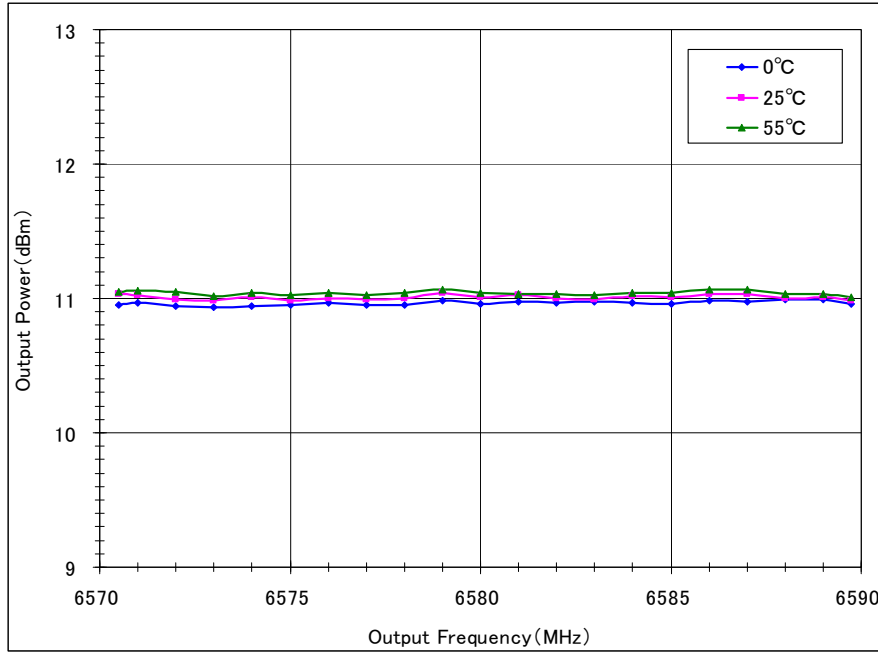


**Output Frequency : 6570.50MHz**



**Output Frequency : 6589.750MHz**

### Output Power



**Channel Number of Rotary Switch VS. Output Frequency**

Channel No.	Output Freq.(MHz)	Channel No.	Output Freq.(MHz)	Channel No.	Output Freq.(MHz)	Channel No.	Output Freq.(MHz)	Channel No.	Output Freq.(MHz)
00	6,570.500	34	6,577.000	68	6,583.500	9C		D0	
01	6,570.625	35	6,577.125	69	6,583.625	9D		D1	
02	6,570.750	36	6,577.250	6A	6,583.750	9E		D2	
03	6,570.875	37	6,577.375	6B	6,583.875	9F		D3	
04	6,571.000	38	6,577.500	6C	6,584.000	A0		D4	
05	6,571.125	39	6,577.625	6D	6,584.125	A1		D5	
06	6,571.250	3A	6,577.750	6E	6,584.250	A2		D6	
07	6,571.375	3B	6,577.875	6F	6,584.375	A3		D7	
08	6,571.500	3C	6,578.000	70	6,584.500	A4		D8	
09	6,571.625	3D	6,578.125	71	6,584.625	A5		D9	
0A	6,571.750	3E	6,578.250	72	6,584.750	A6		DA	
0B	6,571.875	3F	6,578.375	73	6,584.875	A7		DB	
0C	6,572.000	40	6,578.500	74	6,585.000	A8		DC	
0D	6,572.125	41	6,578.625	75	6,585.125	A9		DD	
0E	6,572.250	42	6,578.750	76	6,585.250	AA		DE	
0F	6,572.375	43	6,578.875	77	6,585.375	AB		DF	
10	6,572.500	44	6,579.000	78	6,585.500	AC		E0	
11	6,572.625	45	6,579.125	79	6,585.625	AD		E1	
12	6,572.750	46	6,579.250	7A	6,585.750	AE		E2	
13	6,572.875	47	6,579.375	7B	6,585.875	AF		E3	
14	6,573.000	48	6,579.500	7C	6,586.000	B0		E4	
15	6,573.125	49	6,579.625	7D	6,586.125	B1		E5	
16	6,573.250	4A	6,579.750	7E	6,586.250	B2		E6	
17	6,573.375	4B	6,579.875	7F	6,586.375	B3		E7	6570.500
18	6,573.500	4C	6,580.000	80	6,586.500	B4		E8	
19	6,573.625	4D	6,580.125	81	6,586.625	B5	6570.500	E9	
1A	6,573.750	4E	6,580.250	82	6,586.750	B6		EA	
1B	6,573.875	4F	6,580.375	83	6,586.875	B7		EB	
1C	6,574.000	50	6,580.500	84	6,587.000	B8		EC	
1D	6,574.125	51	6,580.625	85	6,587.125	B9		ED	
1E	6,574.250	52	6,580.750	86	6,587.250	BA		EE	
1F	6,574.375	53	6,580.875	87	6,587.375	BB		EF	
20	6,574.500	54	6,581.000	88	6,587.500	BC		F0	
21	6,574.625	55	6,581.125	89	6,587.625	BD		F1	
22	6,574.750	56	6,581.250	8A	6,587.750	BE		F2	
23	6,574.875	57	6,581.375	8B	6,587.875	BF		F3	
24	6,575.000	58	6,581.500	8C	6,588.000	C0		F4	
25	6,575.125	59	6,581.625	8D	6,588.125	C1		F5	
26	6,575.250	5A	6,581.750	8E	6,588.250	C2		F6	
27	6,575.375	5B	6,581.875	8F	6,588.375	C3		F7	
28	6,575.500	5C	6,582.000	90	6,588.500	C4		F8	
29	6,575.625	5D	6,582.125	91	6,588.625	C5		F9	
2A	6,575.750	5E	6,582.250	92	6,588.750	C6		FA	
2B	6,575.875	5F	6,582.375	93	6,588.875	C7		FB	
2C	6,576.000	60	6,582.500	94	6,589.000	C8		FC	
2D	6,576.125	61	6,582.625	95	6,589.125	C9		FD	
2E	6,576.250	62	6,582.750	96	6,589.250	CA		FE	
2F	6,576.375	63	6,582.875	97	6,589.375	CB			
30	6,576.500	64	6,583.000	98	6,589.500	CC			
31	6,576.625	65	6,583.125	99	6,589.625	CD		FF	"FF" Enables Serial Control Mode
32	6,576.750	66	6,583.250	9A	6,589.750	CE			
33	6,576.875	67	6,583.375	9B	6,570.500	CF			

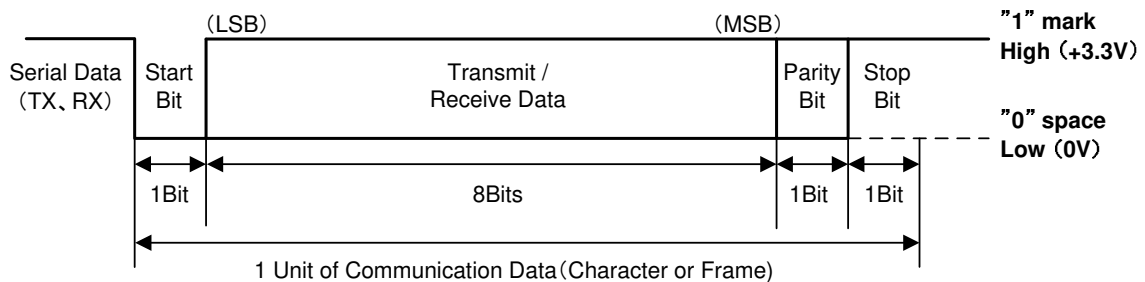
## Serial Signal Communication for Channel Selection

Only the Rotary Switch set to “FF” enables Serial Signal Communication for Channel Selection through Tx and Rx port.

### ① Specification of Serial Communication

Data Rate	38,400 bps
Data Bit Length	8 bits
Stop Bit	1 bit
Parity Bit	Odd
Flow Control	N/A
Data Transfer	LSB First

### ② Data Format



### ③ Electric Characteristics

Item	min.	typ.	max.	Remarks
TX Output High Level Voltage : Voh	2.0V		3.3V	Ioh=800uA
TX Output Low Level Voltage : Vol	0.0V		0.8V	Iol=6mA
RX Input High Level Voltage : Vih	2.0V		3.3V	
RX Input Low Level Voltage : Vil	0.0V		0.6V	
RX Input Input Current : Iih / Iil			±50uA	